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MONTENEGRIN ORES

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Montenegro may be divided into two parts on the basis of the type of ore found there: the southwestern part, which contains bauxite and montmorillonite ores, and the northeastern part, which contains lead, zinc, silver, copper, gold, manganese, iron, barite, pyrite, and other sulfide ores, as well as coal.

The following srez belong to the southwestern part: Bar, Cetinje, Titograd, Danilovgrad, Kotor, Hercegnovi, and a large part of Niksic. In this region red and white bauxite ore, aluminum silicate ore, some iron ore, manganese, barite, bituminous shale, asphalt, and also petroleum are found.

Preparations for exploitation of white bauxite have been made near Carev Most and Trubjela, and for red bauxite near the Kosijerevo Monastery in Zagrad and on Kutsko Brdo (Hill). The largest deposits of red bauxite are found in Niksic Srez, Cetinje Srez, and Bar Srez. Less significant deposits of red bauxite are found in Titograd Srez, Danilovgrad Srez, Hercegnovi Srez, and Kotor Srez. The best red bauxite ore is located in Oblatno, Liverovic, Skori Vrh, Kutsko Brdo, Zagrad, and Stitovo, all of which are in Niksic Zupa (Parish).

In Zagrad 31,365 tons of bauxite were dug in 1948. In the same year it was also established that about one million tons of bauxite reserves are located there. These bauxite deposits are 20 meters thick, and their chemical analysis gives the following results: 60 percent Al_2O_3, 3.64 percent SiO_2, 21.19 percent Fe_2O_3, and 2.84 percent TiO_2. The loss from roasting this bauxite is 12.74 percent.

Large deposits of red bauxite are also found in the Niksic-Cevo-Grahovo area, or more specifically in Crvena Kit, Crveno Lokanje, and Bajov Do, where the deposits are 30 meters thick, and where the bauxite reserves are estimated

to amount to 10 million tons. The chemical analysis of these deposits is as follows: 50 to 55 percent Al_2O_3 and 12 percent SiO_2. In Bar Srez, red bauxite deposits contain 50 to 60 percent Al_2O_3.

The red bauxite ore found in Zivinja and Kobile in Hercegnovi Srez and in Valdinos Bay in Bar Srez was found to contain 55.65 percent Al_2O_3, 6.30 percent SiO_2, 21.71 percent Fe_2O_3, and 3.12 percent TiO_2. The loss from roasting this bauxite is 13.50 percent. There are about 100,000 tons of red bauxite ore containing 60 percent Al_2O_3 and less than 5 percent SiO_2 in Montenegro; the ore is found in Niksic Zupa. The estimated amount of red bauxite ore containing an average of 55 percent of Al_2O_3 and from 5 to 7 percent SiO_2 is about 10 million tons. Montenegro has about 100 million tons of red bauxite containing 50 to 60 percent Al_2O_3 and up to 12 percent of SiO_2.

Of all the republics, Montenegro alone has large quantities of white bauxite. Deposits of this ore are located southwest and west of Niksic and cover an area of over 70 square kilometers.

Some of the most important deposits of white bauxite are located in the following places:

Carev Most, Budos, Brocanac, Ljeskovi Doli, Bijele Poljane, Gostac, Trubjela, Malakita, Bijela Kita, and Krstac.

The white bauxite found in Montenegro consists of boehmite, kaolin, rutile, and limonite. Of all the areas tested for white bauxite, the deposits in Bijele Poljane, southwest of Niksic, have been found most significant for exploitation. The deposits here cover an area of several square kilometers. The following agencies have tested the bauxite from Bijele Poljane: the Institute of Physical Chemistry of the Technical Faculty in Zagreb, the Ironworks in Jesenice, the chemical laboratory of the Main Adminstration of the Federal Industry of Refractory Material in Arandjelovac, and the chemical laboratory of the Mining Office of Montenegro. The nalysis of the white bauxite in Bijele Poljane is as follows:

Chemical composition (in percent)		Minerological composition (in percent)	
Al_2O_3	58.35	Boehmite	45.51
SiO_2	22.52	Kaolinite	49.47
Fe_2O_3	2.25	Limonite	2.25
TiO_3	2.65	Rutile	2.65
Loss from roasting	14.66		

A considerable number of montmorillonite deposits are located at Bijelo Polje above Petrovac Na Moru. Tests have shown that this area has at least 20 million tons of this ore. It is believed that 15 million additional tons of this ore could be found here, but all the tests have not yet been completed. Smaller deposits of this ore are located at Pastrovici, at Virpazar, and at Sustasi in Bar Srez.

Montmorillonite from Bijelo Polje contains 69.17 percent of SiO_2, 14.83 percent of Al_2O_3, 2.88 percent of Fe_2O_3, 2.47 percent of CaO, 2.12 percent of MgO, and 2.27 percent of alkali oxides. The loss from roasting is 5.76 percent.

Barite deposits have been found in the Misic-Sutomore region, where 1,600 tons of ore were dug for testing purposes. Iron deposits were found in Sozina, and manganese ore was found in the vicinity of Petrovac and Kurilo near Stari Bar, and in Boljevici in Crmnica.

Petroleum deposits have been discovered in Smrdez near Bukovik in Crmnica and in Buljarica near Petrovac. Asphalt has been discovered in Ulcinj.

Coal deposits in the Pljevlja basin cover an area of 16 square kilometers. The average thickness of the coal deposits here is 17 meters. The total coal reserves in the Pljevlja basin are from 200 to 250 million tons.

The Ivangrad and Police coal basins are easily three times as large as the Pljevlja basin and their coal has a higher caloric value than coal from Pljevlja, but the seams are thinner and less pure. Several smaller coal basins are located between Pljevlja and Ivangrad, but these have not yet been explored.

In the vicinity of the Ivangrad coal basin, large deposits of cement clay are located near Bandovic Most near Kralj.

Deposits of bauxite were discovered on Kovac Mountain 1948. The analysis of the ore showed that it contains 96.87 percent of $BaSO_4$ 1.41 percent of SiO_2, 0.86 percent of $Fe_2O_3 + Al_2O_3$, 0.43 percent of CaO, and 0.15 percent of MgO. The loss from roasting was 0.39 percent. The center of this deposit is 6 kilometers from the nearest road, and thus is not easily accessible.

Manganese ore and iron ore are located at Klina near Konjuh in Andrijevic Srez, in the Moraca River valley near Ljuta, and in the Sinjajevina region, where deposits, especially of manganese, can be seen for several kilometers. The analysis of the ore in the Sinjajevina region shows that it contains 48.80 to 72.26 percent of MnO_2, 4.20 to 15.93 percent of SiO_2, 1.60 to 5.82 percent of Fe_2O_3, 1.48 to 1.81 percent of Al_2O_3, 0.32 to 2.10 percent of MgO, 1.02 to 36.89 percent of CaO, and 0.10 to 0.23 percent of P. The loss from roasting is 4.80 to 5.30 percent.

Pyrite and copper ores are located in the Konjuh, Murina, Brezovica, Vizitor, and Maja Borit regions, all of which are in Andrijevic Srez. Krnja Jela near Savnik, and Mratinje in the Piva River region, also claim pyrite and copper deposits.

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